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ABSTRACT

The Information Processing Unit of the Council for Exceptional Children Information Center acquires, abstracts, indexes, stores, retrieves, and disseminates a comprehensive bank of information regarding the education of exceptional children. These functions are served by three sections: Acquisitions, Indexing and Abstracting, and Information Services. This paper focuses on that section which deals with the dissemination of information upon request and the storage and retrieval supportive to that process. A proposed plan to systematize and analyze the process, requests and products of the Unit is outlined and specific techniques for facilitating the plan are described. (Author/AB)

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A PLAN TO SYSTEMATIZE AND COORDINATE
OPERATIONS WITHIN A SECTION

The Information Center
ERIC Clearinghouse on Exceptional Children
The Council for Exceptional Children

Dr. Don K. Erickson, Director

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CEC Program Associate
June 29, 1971

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A Plan to Systematize and Coordinate Operations Within A Section

The Information Processing Unit of the CEC Information Center acquires, abstracts, indexes, stores, retrieves, and disseminates a comprehensive bank of information regarding the education of exceptional children. These functions are served by three sections - Acquisitions, Indexing and Abstracting, and Information Services. This paper will focus on that section which deals with the dissemination of information upon request and the storage and retrieval supportive to that process.* In order to make information available efficiently, the Information Services Section must systematically store and readily retrieve it. An operation which solicits requests from users, negotiates them from the resources, and then seeks out requesters' reactions to the service is obligated to perform its functions as effectively and inexpensively as possible.

Users, as diverse and nebulous as their need may appear, approach the Information Services Unit in a bonafide effort to learn. Their need, as diverse as they, suggests that the unit should possess graduated skills and products. A student seeking career information can be assisted with a routine brochure and pamphlet; an administrator, responsible for the educational well-being of thousands, seeking program guidance requires the skills of a search-competent analyst. Products available, likewise, must be graduated in ways

*A full list of current products available to users can be found in Appendix A. Abstracts called on hand searches are also available.

that correspond to the nature of the user as well as to his present need for information. Ongoing efforts to improve the quality of services rendered and to control the supply of documents available are essential to the viability of this system.

A. Background to the Proposed Plan

Prior to this proposal, which describes a plan to systematize and analyze the process, requests and products were handled a priori -- that is as requests were received, the personnel responded with the most appropriate services and documents available. The original proposal for innovating an automated and perpetual recording and analysis of request data was introduced by the author in March.* Differentiated requests were satisfied by the limited staff from a bank of data; hand searches (time consuming as they have been) were conducted for non-routine questions; and referrals to more pertinent sources were made. The volume of requests mounted steadily and overwhelmingly. A virtual tide of outside documents, including those from the Bureau of Education for the Handicapped, inundated the analysts and required both storage and inventory control.

Alternative Roles for the Center

Until recently, this a priori process was not a component of any deliberate role assigned to the Information Center, other than dissemination of available data upon user request. At this point in time, the Center is consciously grappling with several concepts which will more clearly direct its energies and monies.

Will the Information Center function as both a generalist and a localist information agency providing assistance to the high level users whose sights are nationally - or regionally - directed? Or will the Center focus sharply on local, pragmatic users, like teachers and students, providing the proposed materials** so often requested? Some specialists would have the Center serve only the former group in the hope that the SEIMC Network Offices be developed even more broadly to service teachers, students, researchers, parents, etc., in their "own backyards." Meanwhile, the Center attempts to be "all things to all people."

On another functional dimension, the Center is exploring not only what it can and will be for the special education user, but also what it cannot and will not be. This determination is exceedingly important within the scope of energy and fiscal constraints and realities. Whom shall we serve in depth and whom shall we serve superficially? Which products do we finance through design and production and which do we interest other "angels" to subsidize or totally support? What questions do we echo to other agencies and what questions do we negotiate with the user for better articulation? What course do we assume for our growing "regular education" user groups; do we expend as much on their need as on our traditional user?

*Perpetual Recording and Analysis of Information Requests, C. Fineblum, CEC, March 18, 1971.

**Brochures, pamphlets, computer-generated bibliographies, information packets, etc.

More mundanely, but as importantly, are considerations of unit costs. How much do we spend on the fulfillment of each request? Should the range of cost be related to the impact of the user's position on the child(ren)'s educational growth; to the total number of children affected by this information; to the precision or lack of precision of the query (it costs money and user's time to negotiate a fuzzy question); to the number of copies allowable to any user regardless of position and influence? If, indeed, these all become priorities for decision-making, then what is their hierarchy?

Whatever the outcomes, we do know now that unit costs drop when prepared materials can be satisfactorily used. The cost of generating new responses is considerably greater. Therefore, it behooves the Center to transitionalize as many "generated" responses into "prepared" ones as quickly as feasible. This would entail the development and maintenance of a flexible file of completed searches catalogued by descriptor and available for rapid transmittal to users.

Analysis of the Request File

In July, 1970, the Information Utilization Unit initiated an analysis of requests received by the Information Services Unit as one component of its larger User Study, which sought to define more clearly the identity and needs of special education personnel and parents.* Requests received during the one year were analyzed for the following considerations:

- Identity of the User
- Nature of Queries in Each Contact
- The Actual Modes of Response to User

A code for each of these dimensions was developed and the data were recorded for analysis. Interesting patterns and trends emerged from this initial study.

When the User Study was terminated, this writer initiated an analysis of the 4th Q, 1970 requests in order to observe the new data. Utilizing some of the initial methodology and additional techniques (consisting of new dimensions -- handicapping conditions, the role assignment of the users, the number of queries/contacts and specific requests for the bibliography series), the follow-up study replicated the previous patterns. It was apparent that the volume of requests continued to soar** although seasonal influences created some dips and peaks. In addition, it was observed that broad user types were narrowing to sub-specialities and were increasing in number although the ratio within user type remained relatively constant.*** The growing number and diversity of users and requests required an increasingly more complex and burdensome tabulation procedure. With so many categoric types and study

*An Analysis of the Information Requests Received by the CEC Information Center, 3rd Q, 1969 - 2nd Q, 1970, Feb., 1970.

**3rd Q, 1969 - 607 requests. 3rd Q, 1970 - 1,433 requests. See Appendix B.

*** Observations Recorded Since the IRF* Analysis, C. Fineblum, CEC, April 5, 1971.

parameters, the number of data sheets increased steadily and the task of hand tabulating these data became painstaking and time-consuming.*

However, more than tedium, the following factors served as the primary motivations for systematizing this operation:

1. The time lag between fulfillment of the request and the recording.
2. The sporadic tempo in recording, instead of a smooth and ongoing procedure
3. The second-guessing that inevitably occurs when the research analyst must identify the user, the request, and the response in lieu of the defacto information analyst who serviced the user.

It became increasingly apparent that a technique for rapidly recording the essential dimensions of a request during one handling must be devised. That proposal, Perpetual Recording and Analysis of Information Requests, sought to establish a system wherein several operations, germane to Unit objectives, would be accomplished simultaneously. The backbone of this operational system was to make full use of available computers for recording and analysis of requests. Although it was outside of the original proposal's recommendations, use of Dialog, as well as BIRS, was anticipated as a complementary and essential tool in the information process. This complex, it is anticipated, will actualize a most efficient operation for information services -- boosting the special education user and his beneficiaries.

*Sample Tabulation Sheets used in data collections can be found in Appendix C.

B. Purposes of the Plan

Initially, the plan was conceived to structure an ongoing documentation to be used for evaluation and improvement of the request processing system as well as the analysis of those data. It soon became obvious that the two following serendipitous benefits could also be realized without any effort:

An inventory and quality control of the materials available and services rendered.

A continuous index for generating new products or phasing out existent, but obsolete, ones.

Therefore, four interrelated operations would be initiated and sustained with one codified sheet prepared by the analysts in the Service Section.

Four Operations Enabled by the Plan

1. An inventory of materials and products. What in the storehouse is needed, on order, and how many remain?

2. New product development and review of user information needs. What new fields or concepts indicate accelerated (decelerated) demands? At what frequency do users request specific content materials? Are there seasonal patterns that suggest special readiness and delivery plans?

3. Patterns of present use and need (contrasted to previous ones) are meaningful pacesetters for forecasting and planning. Can we expect teachers to request pragmatic translations of research? Are administrators interested in "Precision Teaching?" Do regular education students need guides for instructing exceptional children?

4. An Orientation for Section Dynamics. A continuous monitoring of the system's operation will imply modifications for more effective service. Has the nature of the request, the identity of the user, the spectrum of the available materials and services inferred changes in the interaction of the personnel, additional or diversified skills, new use of machines and equipment, liaison with other agencies, and a myriad of other functions? Are present roles providing the most economical dynamics?

5. Automatically generated data for the ERIC Quarterly Report. How can the codified data be converted to ERIC terms? Will an equivalence listing* permit a more simplified research procedure?

*A sample coding sheet and equivalence terms can be found in Appendix D.

C. Dynamics of the Plan

In order to fulfill the foregoing functions in the system, only one set of data is needed. Those dimensions identified by the analyst when the request arrives will be considered by both data processing and the research group to derive meaningful patterns:

the identity of the user,
the nature of his request(s),
the Center's mode(s) of response.

Resources for System Implementation

Human Resources

The request processing personnel will consist of a supervisor and at least two other analysts. The first analyst will possess skills developed in communication and computer operation. The other analyst will be a clerical person already experienced with the organization and its products. The supervisor's skills encompass both special education and library science expertise. Together they perform the services needed to efficiently process requests as received.

The Data Processing Unit at CEC will train and make available a staff member to receive the data already coded for storage.

The research analyst will retrieve and analyze the data so as to recommend practices from demonstrated trends.

Material Resources

The Information Services Section may select one or more materials from a growing list of available products to return to the user.

Directories, compendia, brochures, and many other reference volumes are used for referrals to more appropriate sources for information.

Machine Resources

The Dialog System

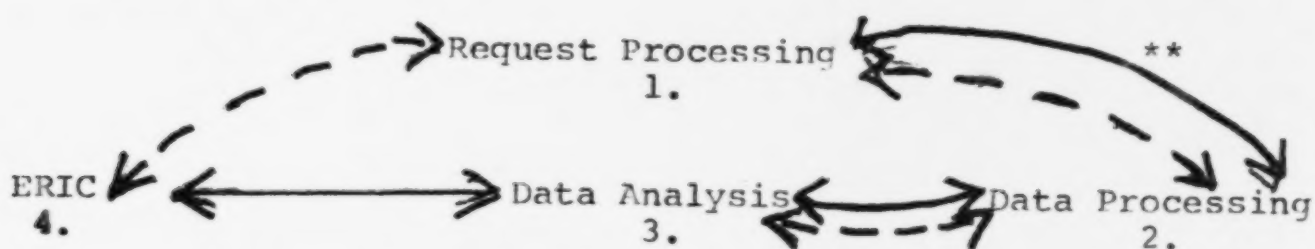
Heretofore, time-consuming hand searches have been the Center's principal tool for providing abstracts and citations to those who are responsible for the education of many youngsters.

The installation of Dialog* with its great precision and fast returns, will assure a significant savings to the Center, and thus the user, in terms of time/unit request spent. Its printouts, as they become a library file in themselves, can be retrieved and transmitted by clerical assistants quickly.

The BIRS installation currently in use at CEC will provide storage and retrieval capability for the data recorded by the analyst and punched by Data Processing.

Macro-dynamics Interdepartmental

The interaction amongst the three departments involved can be pictured in the following way:



Information, already described, will be coded on form sheets by the analyst in the Service Section. The coded form will be sent on to the keypuncher in Data Processing. The stored data can then be recalled by the research analyst as needed for planning. ERIC reports are generated from the recalled data. Above all, a dialogue within these separate groups must be assured so that each openly communicates goals and problems to the other.

*Some salient features of Dialog at CEC can be found in Appendix E.

** flow of data
 ----- idea transaction

Macro-dynamics Within Each Department

The dynamics within each department can be viewed as a transaction of materials and information between the personnel involved. The section head in each will function as trainer and monitor purviewing the flow of services and products so as to facilitate quality in personnel performance and ease of information exchange. Training is an essential consideration in promoting efficiency within the new system. Although new learnings will occur quite naturally to astute personnel, as they man the equipment and utilize the materials, planned training sessions will optimize and hasten the best use of those tools and reduce barriers in verbal and action communications, most often the single largest obstacle to success in information services. Training workshops in-house and in-field will be discussed later. A training manual should be developed for our prime user groups (The SEIMC Network office, BEH personnel, D & R Labs, other clearinghouses, etc.,) to enhance their understanding of this system's goals, equipment, and materials. Any efforts to match the vocabularies used by the requester and analyst will guarantee better services. Since the data base utilized will be a common one, prime users should be aware of the latitude of the base so that their search questions will precisely call a maximum number of "hits." In addition, knowledge of the Dialog System will permit these users to eventually pinpoint direct requests in search-worthy terms and configurations.

1. Dynamics Within the Services Section -- Request Processing

The objectives for this section involve the following operations:

- to receive, interpret, and fill requests
- to continuously enhance personnel skills
- to secure for and transmit to the user quality materials
- to evaluate the appropriate role of the section and of the service rendered related to the user needs and costs involved.

The last objective is premised upon a conscious determination of the parameters for services assigned by the Center. That is, what requests and chores does the Center choose not to fill under realistic constraints of time and funds? This is a most germane concern, especially since other information agents choose to and can more appropriately negotiate such needs.

Personnel

Clerk-analyst
Dialog Specialist
Supervisor-analyst

A model for flow of request through the system can be found in Appendix F.*

b. Clerk Analyst

The clerk-analyst serves a dual function, analytic and clerical.

Analytic

As the clerk receives requests, she will select for herself those which can be filled with "prepared" materials. Other requests, which require search and referral services, are transmitted to the Dialog-Specialist. The clerk selects products and materials from the shelves appropriate to the request. At that time she checks the required information on the coded sheet indicating which product was returned by assigned number. It should be noted that the amount of time spent on that response will be entered.

Clerical

1. The clerk compiles the proper packages of prepared materials prescribed at her own discretion.
2. She readies all other packages prescribed by the other personnel (products of searches and referrals) when the coded sheet is returned verifying that all items noted on the coded sheet have been accounted for.
3. The clerk types any original responses generated by the analyst and incorporates these with the materials retrieved.
4. The clerk checks for the smooth flow of mail from the Center through the mail-room.

*The sequence of personnel duties described here follows the flow of requests through the section

- 5) The clerk will alert the section supervisor to any problems regarding materials' availability or quantity control.
- 6) The clerk will return the coded sheets to the keypuncher upon completion of the responses.

In an effort to minimize the cost of this operation without sacrificing the quality of the service, as many duties as can be effectively handled will be given to junior employees. Not only does this filtration approach save funds, which can be used elsewhere, but it also releases senior personnel to more complex and skilled duties.* Therefore, a natural filtering process occurs within the group.

b. The Dialog Specialist (D-S)

As the D-S receives search-type requests from the clerk, she will determine if a search is required, ascertain that previous printouts are not then available, and proceed to run searches batching requests by closely related descriptors. If a printout exists she will alert the clerk to this and the clerk will fill the request from that point on. Results of new searches will be filed by descriptor and a printout copy mailed on to subsequent users by the clerk.

Any question which involves an in-depth analysis outside of the ERIC file, should be referred to the supervisor-analyst for service.

The D-S will code the sheet under "generated response" indicating the descriptors assigned for storage, and code in her initials. Alternatives for action should be her prerogative as the workload and on-line time may fluctuate. Time required for each search should also be entered.

An ongoing contact between the D-S and the research analyst will alert the system to emerging trends in user behavior and inventory strengths.

*See a model for Unit costs related to personnel level and request frequency in Appendix G.

A Search File

When Dialog is not on-line, the D-S should be preparing a file of search printouts catalogued by descriptor. This search-generated-file can eventually be used as "prepared" material by the clerk in responding to users. The clerk can maintain this file; the D-S should spot-check its organization and update its contents related to frequency of each printouts' use.

c. Supervisor-Analyst

The S-A is the supervisor of this section. Her responsibilities are primarily related to maintaining a wholesome atmosphere in which the personnel perform services and process materials effectively.

Training inexperienced personnel to operate at the highest level of their competency is a major task. It will fall to her to arrange training workshops when new equipment is introduced.

Training Network and non-CEC staff to utilize the Dialog system will also be coordinated by her under the supervision of her supervisor, head of the Information Processing Unit.

Spot-checking responses to users will be an essential component in quality control. Inventory results should be brought to her for final determinations.

An ongoing contact with her staff alerts her to incipient problems that she then may resolve easily.

She will receive from the D-S those requests which require:

- 1) Specialized searches, referrals, or staff contact
- 2) Liaison by personal contact with high-level users who require sophisticated responses.

The S-A should exercise her own discretion, supported by the Unit head, in modifying the internal interaction of the section as experience indicates.

A model describing the path of a request is provided on the following page. Experience with the computer, the data file, present personnel and the nature of the requests will determine what new configurations are justified.

2. Duties and Responsibilities of Data Processing

The keypuncher assigned by Data Processing to this operation will receive the coded sheets from the clerk-analyst and proceed to punch all of the information provided.

She will store and maintain these records and retrieve them upon request of the research analyst and/or the S-A.

Providing printouts

Printouts will be provided by data processing for the following purposes:

- a. Analysis of patterns by the research analyst
- b. Periodic inventory count by the Supervisor-analyst
- c. Inter-departmental conferences on the nature of the data being accumulated.

3. The Research Analyst-(R-A)

Collecting data is a rather useless endeavor without some purposeful motives. This operation presumes that the following organizational factors exist:

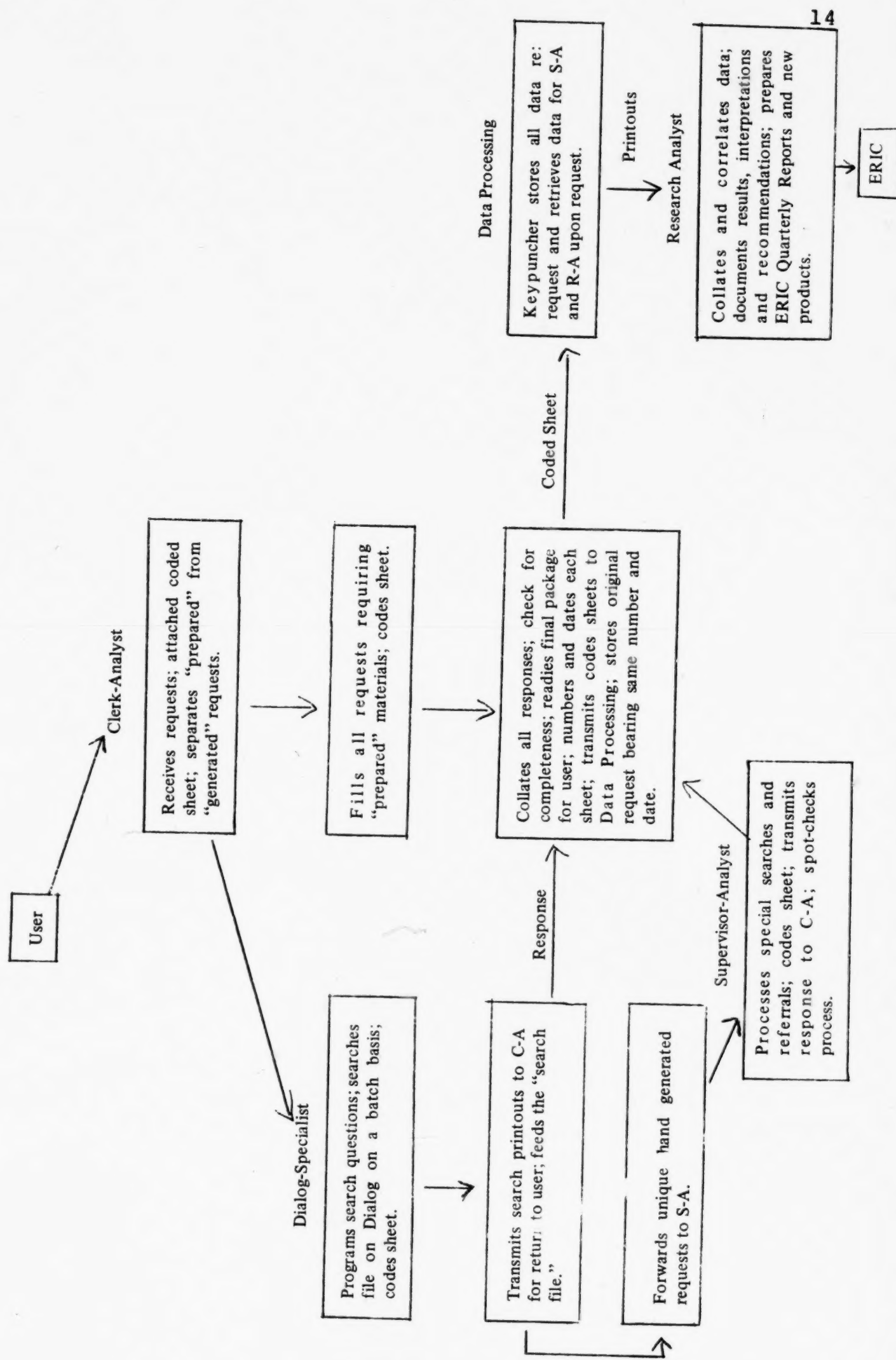
- a system open to change
- a competent person is available to fully utilize the data collected.

The system must early-on establish and communicate a viable structure for interaction between the R-A, data processing, and the service personnel.

Duties and Responsibilities

Analysis of the data collected should be conducted by another analyst outside of the Service Section. In this manner, the necessary degree of objectivity can be achieved. A research analyst, skilled in interpreting the data and familiar with the request-response system, should be available for the following tasks:

Path of an Information Request: Receipt, Interpretation, Fulfillment, Analysis, and Dissemination



- a. Periodic recall of inventory data from the file to provide to the S-A for "materials stock status."
- b. Periodic recall (advisably once a week) of the data and correlated information from the file to determine trends. Visual or graphic computer-generated displays are most helpful in studying patterns of user and request data. The large sample available provides a natural bank of information from which to justifiably plan procedures, products and personnel distribution. In addition, the unit cost for processing requests can be quickly computed and periodically reviewed.
- c. Presentation of correlated findings and results related to BEH priorities, Network functions, ERIC projects, CEC programs in order to recommend support tactics and products.
- d. Presentation of these results with recommendations for action to the Director of the Information Center, and to advise the CEC Products Committee about new or changing needs while the data is still fresh. It is desirable that she be permanently assigned to this committee as advisor and consultant, so that the committee can be apprised of field response to CEC products.
- e. To prepare, in advisement with the S-A, the ERIC Quarterly Report, Section D, from the data retrieved. This, of course, frees the S-A who currently is responsible for this assignment.
- f. To monitor other information trends and activities, to establish a liaison with other agencies; and to provide that information to the Center Director opening new channels for interaction and exchange. She would inform CEC about the tools and practices of other agents in an effort to serve the special education community most comprehensively.

D. Specific Techniques for Facilitating the Plan

Any systems approach worth "its salt" is predicated upon clearly envisioned objectives. Then the approach requires some quantifiable proof that the modus operandi creates an effective output. Such legitimate questions as -- Does the quantity of output justify the quantity and scope of input? Is that provable? Are alternative practices available that might optimize the size of the quotient which results from this practice:

$$\frac{\text{(output)}}{\text{(input)}} = \text{Results}$$

Alternatives should be considered periodically to compensate and adjust course "as we go."

This paper has attempted to describe the quantitative and qualitative benefits of a plan to systemize necessary operations. An ongoing evaluation of the plan in operation may well change its structure and character. However, the ability of the organization to modify that plan in accordance with the data collected will be testimony to its strength.

There are several techniques which, the author believes, will facilitate ease of implementation and broaden benefits to the entire organization:

- a. Openness between interactants and system flexibility should be deliberately maintained* and guaranteed.
- b. Documentation

A running account of the genesis and evolution of this system should be the responsibility of the staff (e.g. the research analyst). A well documented project permits:

1. Ready reference by the planners to the process that is unfolding,
2. The Center to share the process with other information agencies as they develop and grow,
3. BEH and NCEC to understand Center goals, activities, and the state-of-information art. This document will offer a permanent archival bank of information at "budget-time," etc. The Center might well offer a periodic State-of-the-Information-Need to BEH for their awareness.

*"Specific Techniques for Implementing a Record-Keeping System", C. Fineblum, CEC, 4/71

c. Bibliographies as Outgrowths of the "Search File"

Those printouts that have been generated by the Dialog Specialist, descriptorized and shelved, and available for rapid retrieval can be used for the generation of new bibliographies. The research analyst, recalling from BIRS the frequency of requests in specific areas (by **descriptor**), can produce a list of the most favored topics. This list provides candidates for the next bibliography series--all rather effortlessly.

In this manner, time-consuming search efforts are converted to time-saving "prepared" responses. Q.E.D. Costs drop.

As Archimedes said when he wielded his fulcrum -- "give me a long enough lever and a place to pivot, and I will lift the world."

We, at the CFC Information Center, do not intend to lift the world. However, we do have a fulcrum -- a tool with which to perform work, activate resources, and lighten the load. Today, in our complex world, the load is not so physical or simple as a heavy cart sunk in the mud. Our load is the massive responsibility of providing services and products to users whom we cannot see or touch and whom, frequently, we cannot even understand. Our load is also the immense financial cost attendant to those services.

If process and tools, such as systems planning and Dialog computers, can reduce the weight that impedes progress, the road will surely become more navigatable.

Appendix A
Materials List

STANDARD LETTERS

- 101 A. CEC Information Center Hanger
- 102 B. We Hope
- 103 C. Checklist

- 104 D. Careers

- 105 E. IMC-TEM letter

- 106 F. Job letter
- 107 G. Teachers Aide letter

- 108 I. Parent Letter

ENCLOSURES

- 301 Selected Materials
- 302 Selected Materials
- 303 ERIC Can Help, FCEA flyer, ERIC ExCerpt, CEC Publications List, CIJE flyer
- 304 Careers in Special Education Agencies Guide, Scholarship booklet
- 305 IMC reprint, ERIC Can Help, ECEA flyer, CEC Publication List, TEC flyer
- 306 Recruitment bulletin
- 307 Blessing reprint, Careers in Education,
- 308 Helping Bibliography, Agencies Guide

REPRINT BIBLIOGRAPHIES

- 201 Emotionally Disturbed Children
- 202 Children with Learning Disabilities
- 203 Administration of Special Education
- 204 Aurally Handicapped Children
- 205 Behavior Modification
- 206 Culturally Disadvantaged Children
- 207 Gifted and Creative Children
- 208 Mentally Handicapped Children
- 209 Physically Handicapped, Homebound and Hospitalized Children
- 210 Speech Handicapped Children
- 211 Teacher Preparation and School Accreditation

MISCELLANEOUS MATERIALS

- 401 Sample EC and order form
- 402 Sample TEC and order form
- 403 Sample ETMR and order form
- 404 The Six Hour Retarded Child
- 405 These Too, Must Be Equal - Employment of the Mentally Petarded
- 406 ERIC - Your Guide to Current Educational Information
- 407 MR' 70
- 408 Special Education - What It Means, What It Offers
- 409 Research in Education Cumulative Index Brochure
- 410 Information Center for Handicapped Children brochure
- 411 The Problem of Mental Retardation
- 412 CEC promotional brochure
- 413 CEC - Divisions brochure
- 414 CEC in Canada brochure
- 415 Personnel Recruitment brochure

- 416 "Interpreting" leaflets -- When Working with the Deaf
 - Information for Doctors
 - Information for Mental Health Specialists
 - Information for Attorneys
 - Information for Judges
 - Information for Teachers
- 417 For Your Consideration -- Careers (5)
- 418 Guidelines for Introducing Mentally Retarded to the Public Library
- 419 International Work-Shop Courses for Teachers of the Mentally and Physically Handicapped
- 420 Careers in Education - pamphlet
- 421 National Center for Information on Careers in Education - brochure
- 422 Blessing reprint - Use of Teacher Aides in Special Education
- 423 How to Use ERIC
- 424 January '70 Update
- 425 Careers in Special Education
- 426 ERIC ExCerpt (April '70)
- 427 Learning Disabilities Program Inventory Check Sheet for Materials
- 428 Enjoyable Driving -- driving equipment for the physically handicapped
- 429 ETMR Reprint - The Now Way to Know -- R & D Centers
- 430 CEC Information Center booklet - The Now Wat to Know
- 431 Scholarship booklet
- 432 ECEA leaflet
- 434 To Your Future With Love
- 435 CIJE leaflet
- 436 The Handicapped in the Regular Classroom - Ashcroft
- 437 Better Education for the Handicapped Children
- 438 ERIC ExCerpt (April '69) - Guide to Agencies and Organizations Concerned with Exceptional Children
- 439 ERIC ExCerpt (Feb, '71) -- CECIC
- 440 ERIC ExCerpt (Jan '70) -- CECIC
- 441 In Service to the Mentally Retarded
- 442 ERIC ExCerpt (Sept. '70) -- Information Analysis Products
- 443 NEA Salary Schedule Provisions for Special Education Teachers ('68-69)
- 444 CEC Publications List
- 445 AAPHER flyer
- 446 ACLD Newsletters (No. 47-57)
- 447 Closer Look leaflet
- 448 Dimensions (limited copies)
- 449 NCEC leaflet
- 450 ERIC Products List (69-70)
- 451 MR Publication of HEW
- 452 Selected Reading Suggestions for Parents of Mentally Retarded Children
- 453 Residential Services for the Mentally Retarded: An Action Policy

Proposals

EXCEPTIONAL CHILDREN BIBLIOGRAPHY SERIES

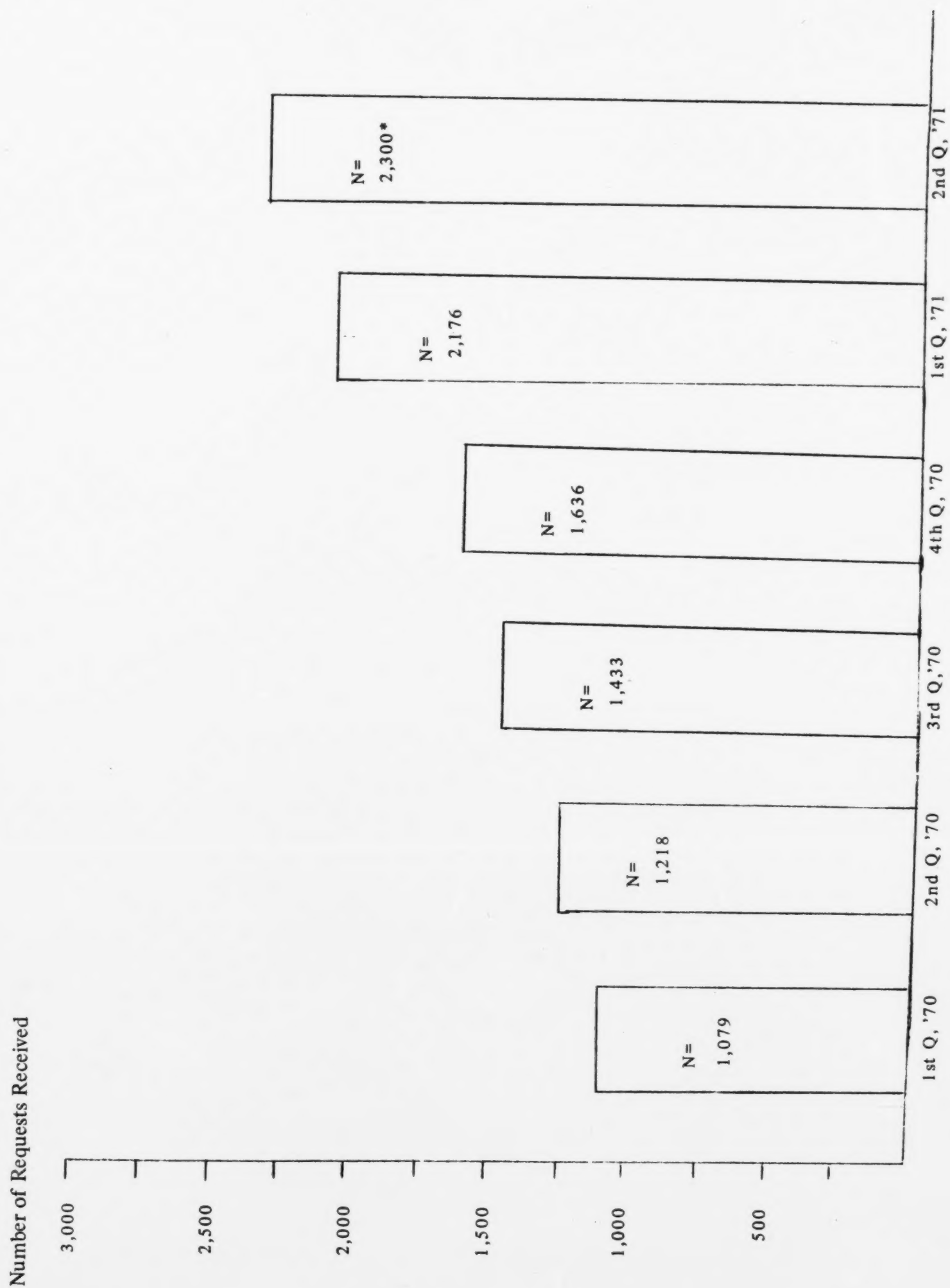
- 601 Hyperactivity
- 602 Drug Therapy
- 603 Austism
- 604 Mongolism
- 605 Arts and Crafts
- 606 Preschool and Early Childhood
- 607 Homebound or Hospitalized

608 Behavior Modification
609 Gifted and Creative Programs
610 Administration
611 Curriculum Guides
612 Physical Education and Recreation
613 Reading Methods and Problems
614 Multiply Handicapped
615 Learning Disabilities - Programs
616 Learning Disabilities - Research
617 Emotionally Disturbed - Programs
618 Emotionally Disturbed - Research
619 Visually Handicapped - Programs
620 Visually Handicapped - Research
621 Educable Mentally Handicapped - Research
622 Educable Mentally Handicapped - Programs
623 Regular Class Placement/Special Classes
639 Gifted and Creativity Research
641 Trainable Mentally Handicapped - Research
624 Aurally Handicapped - Programs
625 Aurally Handicapped - Research
630 Perceptual-Motor Development
633 Vocational Training
638 Directory of Services and Facilities
642 Juvenile Delinquency
643 Cerebral Palsy

Appendix B

A Profile of the Total Number of Information Requests Received
by the Center on a Quarterly Basis Between
January 1, 1971 and June 30, 1971

Requests Received Quarterly Between January 1, 1970 and June 30, 1971



*This is an approximate number calculated from the known figure of 757 requests for May '71.

Appendix C

Sample Tabulation Sheets

1. Data Re: User and request (one entry/contact)
2. Response Formats (each response mode entered once)
Entries were made in user code
3. Distribution of Queries posed for each request area
(one entry/query) Many requests contained multiple queries.

USERS	PRIORITY AREAS				Requests Received		During October, 1970		Sub-	
	Early Childhood Pres. Curric. Mgmt.	Vocational Educ. Work. Study Prog.	Admin. Prog.	General Training Tech. Supp.	Enrich. Prog.	Adult Prog.	Adult Prog.	Adult Prog.	Adult Prog.	Total
Sp Ed Gen										
Med										
Adm										
Ch										
B										
R Regular										
Specialists										
Sp Ed										
Colleges & Univ										
Sp Ed. Tech.										
Reg. Tech.										
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Oct., 1970

Response Format & Processes

"Prepared Materials"

Analyst "Generated" Services

Request Area	Brochures	Pamphlets	Biblios	Xeroxed Abstracts	Literature Search	Referrals	Negotiated Q	Individualized
Ear. Child Diagn. Mat. Curric. Leg/Fund								
Voc. Ed. Work St. Shelt. Work Leg/Fund Gen.								
Admin. Proc. Place/Env. Programs Leg/Fund								
Personnel Train. Non-Teach Prog & Mat. Supp. Prog. Teacher Exch								
IM & M Guides Films Materials Methods Leg/Fund								
Att. Mod								
Jobs								
Careers								
Nature & Needs Intrinsic Intervention Publications								
Parent Liaison								
Agencies								
Statistics								
Publications								
CEC/ERIC Org. CEC/ERIC Prod. Info. on IX. Ch								

Number of Queries Posed Within Request Areas Oct '70

No. of Queries Requested	Request Areas												Total
	EARLY CHILDHOOD	VOCAT EDUC	Administrative Proc.	Personal Training	Instruction	Materials	Public Affs	Behav. Needs	Revent Areas	Publications	Jobs	General	
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11-13													
14-16													
17-20													
21-30													
over 31													
Total													

*all 26 Bibs. were requested
 o all queries were in this one area

Appendix D
Sample Coding Sheet
and
List of Descriptors Derived from the Code Used

CODING SHEET FOR REQUESTS AND RESPONSES

Date Arrived _____ State _____
 # _____ Date Returned _____ (Circle at least one in each category)

I		II		III		IV		V	
S	M	Request Code	User Code	Response Mode "Prepared"	"Generated"	Disability Areas			
1	2	EC ₁ EC ₂ EC ₃	PT ₁ PS ₁ PC ₁ C SW ₁ D ₁ Ad ₁ R ₁ Par St ₁ Un	101 201 301 401 501 601	Dialog Search	ED			
1	3	VE ₁ VE ₂ VE ₃ VE ₄	PT ₂ PS ₂ PC ₂ P ₁ SW ₂ D ₂ Ad ₂ R ₂ St ₂	102 202 302 402 502 602		MR			
1	4	AP ₁ AP ₂ AP ₃ AP ₄	PT ₃ PS ₃ PC ₃ P ₂ SW ₃ D ₃ Ad ₃ R ₃ St ₃	103 203 303 403 503 603		EMR			
1	5	PT ₁ PT ₂ PT ₃ PT ₄	PT ₄ PS ₄ PC ₄ P ₃ SW ₄ D ₄ Ad ₄ R ₄ St ₄	104 204 304 404 504 604		THR			
1	6	IM ₁ IM ₂ IM ₃ IM ₄	PT ₅ PS ₅ PC ₅ P ₄ SW ₅ D ₅ Ad ₅ R ₅ St ₅	105 205 305 405 505 605		NI			
1	7	AM	PT ₆ PS ₆ PC ₆ P ₅ SW ₆ D ₆ Ad ₆ R ₆ St ₆	106 206 306 406 506 606	Time By	G			
1	8	BM	PT ₇ PS ₇ PC ₇ P ₆ SW ₇ D ₇ Ad ₇ R ₇ St ₇	107 207 307 407 507 607	Referral	VI			
1	9	J Car	PT ₈ PS ₈ PC ₈ P ₇ SW ₈ D ₈ Ad ₈ R ₈ St ₈	108 208 308 408 508 608		LD			
1	10	N ₁ N ₂ N ₃	PT ₉ PS ₉ PC ₉ P ₈ SW ₉ D ₉ Ad ₉ R ₉ St ₉	109 209 309 409 509 609		S & HI			
1	11-13	PL Ag	PT ₁₀ PS ₁₀ PC ₁₀ P ₉ SW ₁₀ D ₁₀ Ad ₁₀ R ₁₀ St ₁₀	110 210 310 410 510 610	Time By	Disadv.			
1	14-16	Stat	PT ₁₁ PS ₁₁ PC ₁₁ P ₁₀ SW ₁₁ D ₁₁ Ad ₁₁ R ₁₁ St ₁₁	111 211 311 411 511 611	Individualized	PH			
1	17-20	Pub ₁ Pub ₂ Pub ₃	PT ₁₂ PS ₁₂ PC ₁₂ P ₁₁ SW ₁₂ D ₁₂ Ad ₁₂ R ₁₂ St ₁₂	112 212 312 412 512 612		Other			
1	over	Other	Other	113 213 313 413 513 613	Time By				
				114 214 314 414 514 614					
				115 215 315 415 515 615					
				Time By					

The following coding sheet is an example of the simple form that should be filled out by each analyst handling the request. Attached to the original request and all accumulating responses, it should accompany the request through processing and be separated from it only when the request has been completely filled and the package is transmitted to the user. At that time, the sheet is relinquished to the keypuncher by the clerk-analyst.

The code assigned must remain flexible and reflect the experience with user and request types. Periodically, the research analyst may wish to revise the code as the "Other" category so indicates. The assigned codes are not to be construed as rigid, but simply as a launching device for recording major dimensions of the process.

The clerk will select the appropriate code for the first four columns (single or multiple number of queries made, the nature of the request, the identity of the user, and the disabilities area described in the request). She will also circle the prepared products that she selects for return as well as her initials and time taken for response. The numbering system has been designed to indicate the type of product sent, e.g. CEC reprints are in 200 series, bibliographies are in the 600 series, etc. The user's state will be entered as a 2 letter abbreviation later to be used for research by SEIMC offices.

The remaining portions of the sheet will be filled out by either or both the Dialog Specialist and the Supervisor under "generated" responses. It is anticipated that the time utilized for these types of responses will be longer, but that their frequency will be lower than those inferring "prepared" responses. This section will provide the ingredients for the "Search File" as well as for the data on processing time and skills required.

The pages following the coded sheet provide a listing of those categories which emerged from the early analyses of requests. Their descriptor equivalents are also provided in terms that are concordant to ECEA* terms. In this way, the descriptor assigned can later become the index for the data base in the "Search File." These terms will periodically be deleted and modified as the request panorama changes.

* Exceptional Child Education Abstracts -- CEC, Arlington, Virginia

ECEA Thesaural Equivalencies for Request File Descriptors

<u>Users</u>		<u>Users</u>	
<u>Code</u>	<u>Thesaural Equivalency</u>	<u>Code</u>	<u>Thesaural Equivalency</u>
<u>Teachers</u>		<u>Administrators</u>	
PT ₁	Special Education Teachers	Ad ₁	(Supervisors and Exceptional Child Education)
PT ₂	Emotionally Disturbed	Ad ₂	(Superintendents and Exceptional Child Education)
PT ₃	Educable Mentally Handicapped		
PT ₄	Trainable Mentally Handicapped	Ad ₃	Supervisors
PT ₅	Neurologically Handicapped	Ad ₄	Superintendents
PT ₆	Gifted	Ad ₅	(Consultation Programs and Supervisors)
PT ₇	Visually Handicapped	Ad ₆	(Educational Planning and Agencies)
PT ₈	Learning Disabilities	Ad ₇	(Business Subjects and Agencies)
PT ₉	Speech Handicapped	Ad ₈	(Government and Supervisors)
PT ₁₀	Cultural Disadvantage		
PT ₁₁	Hard of Hearing		
PT ₁₂	Teachers		
PT ₁₃	Teacher Aides		
<u>Specialists</u>		<u>Researchers</u>	
PS ₁	Reading	R ₁	(Research and Personnel and Exceptional Child Education)
PS ₂	Speech Therapists (no Hearing Therapists)	R ₂	(Research and Personnel)
PS ₃	Art	R ₃	Others
PS ₄	Music Therapy		
PS ₅	Physical Education		
PS ₆	Instructional Materials		
PS ₇	Resource Teachers		
PS ₈	Physical Therapists		
<u>College</u>		<u>Parent</u>	
PC ₁	(Special Education Teachers and Universities)	Par ₁	Parents
PC ₂	(Teachers and Universities)	Par ₂	Volunteers
PC ₃	(Personnel and Universities)		
PC ₄	(Research and Development Centers and Universities)		
<u>Counselors</u>		<u>Students</u>	
C ₁	(Public Schools and Counselors)	ST ₁	(High School and Student (Behavior))
C ₂	Counseling Centers	ST ₂	Undergraduate Study and Exceptional Child Education and Student
		ST ₃	(Undergraduate Study and Student)
		ST ₄	(Graduate Study and Exceptional Child Education and Student)
		ST ₅	(Graduate Study and Student)
<u>Psychologists</u>		<u>Unidentified</u>	
P ₁	School Psychologists	Un	(Identification and Negative
P ₂	(Clinics and Psychology)		
<u>Social Workers</u>			
SW ₁	School Social Workers		
SW ₂	(Clinics and Social Work)		
SW ₃	(Agencies and Social Work)		
<u>Disseminationists</u>			
D ₁	(Public Schools and Libraries)		
D ₂	(Universities and Libraries)		
D ₃	Research and Development Centers and Instructional Materials Centers		
D ₄	Others		

ECEA Thesaural Equivalencies

Request Categories

Code Thesaural Equivalency

EC Early Childhood

EC₁ (Early Childhood and Diagnostic Tests)
EC₂ (Early Childhood and Curriculum)
EC₃ Early Childhood and Teaching Methods)
EC₄ Early Childhood

VE Vocational Education

VE₁ Work Study Programs
VE₂ Sheltered Workshops
VE₃ (Legislation and Vocational Education)
VE₄ Vocational Education

AP Administrative Problems

AP₁ (Grouping and Placement)
AP₂ Environmental Influences
AP₃ Program Design
AP₄ (Legislation and State Legislation and Administrative Problems)

PT Personnel

PT₁ Teacher Aides
PT₂ (Instructional Media and Programming)
PT₃ (Teacher Education and Private Financial Support)
PT₄ (Teachers and Foreign Legislation)
PT₅ (Teacher Education and Legislation)

IM & M (Instructional Materials & Teaching Methods)

IM & M₁ Curriculum Guides
IM & M₂ Instructional Materials
IM & M₃ Teaching Methods
IM & M₄ Class Management
IM & M₅ Diagnostic Teaching
IM & M₆ (Media Technology and Films

BM Behavior Modification

J Job Placement

Car Career Planning

Request Categories

Code

N & N (Individual Characteristics and Need)

N & N₁ (Etiology and Individual Characteristics)
N & N₂ (Intervention and Class Management)
N & N₃ (Information Service and Need and Exceptional Child Education)
N & N₄ (Diagnostic Tests and Exceptional Child Education)

Par L Parent School Relationship

Ag (Agencies and Facilities)

Stat (Statistical Data and Legislation)

Pub Information Services

Pub₁ (Information Dissemination and CEC/ERIC)
Pub₂ (Library Services and CEC/ERIC)
Pub₃ Library Services and Exceptional Child Education
Pub₄ (Research and Reviews and Publications and Exceptional Child Education)
Pub₅ (Rejection and Verbal Communication)

Appendix E

The Dialog Terminal Service and Anticipated Tasks

Dialog Terminal Service*

The following tasks have been contracted to Lockheed by CEC for the installation and operation of the Dialog Terminal Service, which will render the ECEA information file retrievable on demand.

- Task 1: "Conversion of the CEC data base of approximately 2000 Exceptional Child Abstracts to Dialog format.
- a. CEC index terms, where appropriate, will reference the ERIC Thesaurus for related terms.
 - b. Two updates will be provided at an approximate interval of 3 months during the contract."
- Task 2: "Installation of the ERIC/CEC Dialog Terminal
- a. A remote terminal consisting of a CRT device and hard copy printer will be installed. . . .
 - b. Terminal instruction will be provided by CEC personnel on site."**
- Task 3: ERIC/CEC Dialog Terminal Services
- a. "On-line services will be provided 2 hours per working day during the contract.
 - b. Up to 6000 lines of computer printout of search results will be provided on a daily basis.
 - c. Courier services will be provided on a daily basis for delivery of search results."

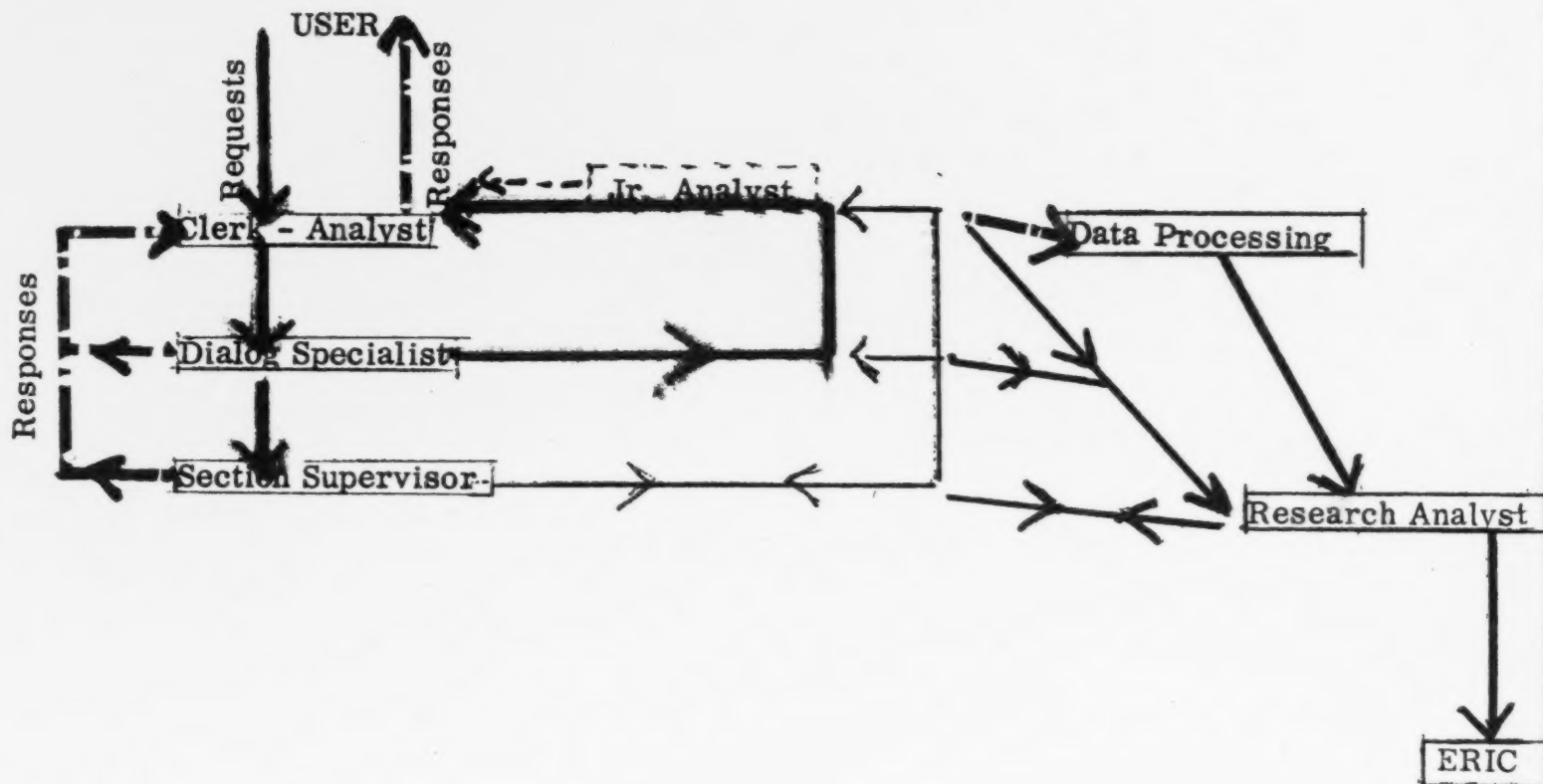
"It is anticipated that this terminal will be operational on or about July 1, 1971, and that the CEC data base will be available on-line by August 1, 1971."

* Enclosed are excerpts from Lockheed's Contract Proposal Lockheed, Palo Alto Research Laboratory, May 21, 1971
Asterisks have been added to emphasize that similar training to this might be used with the SEIMC network staff.

Appendix F

A Model for Interaction within the Information
Services Section Re: Request Processing

Model - Interaction of Information Service Section
Re: Request Processing



- Requests in process
- - - - -** Completed responses
- Ongoing training, section interchange
- - - - -** Projected personnel

Appendix G

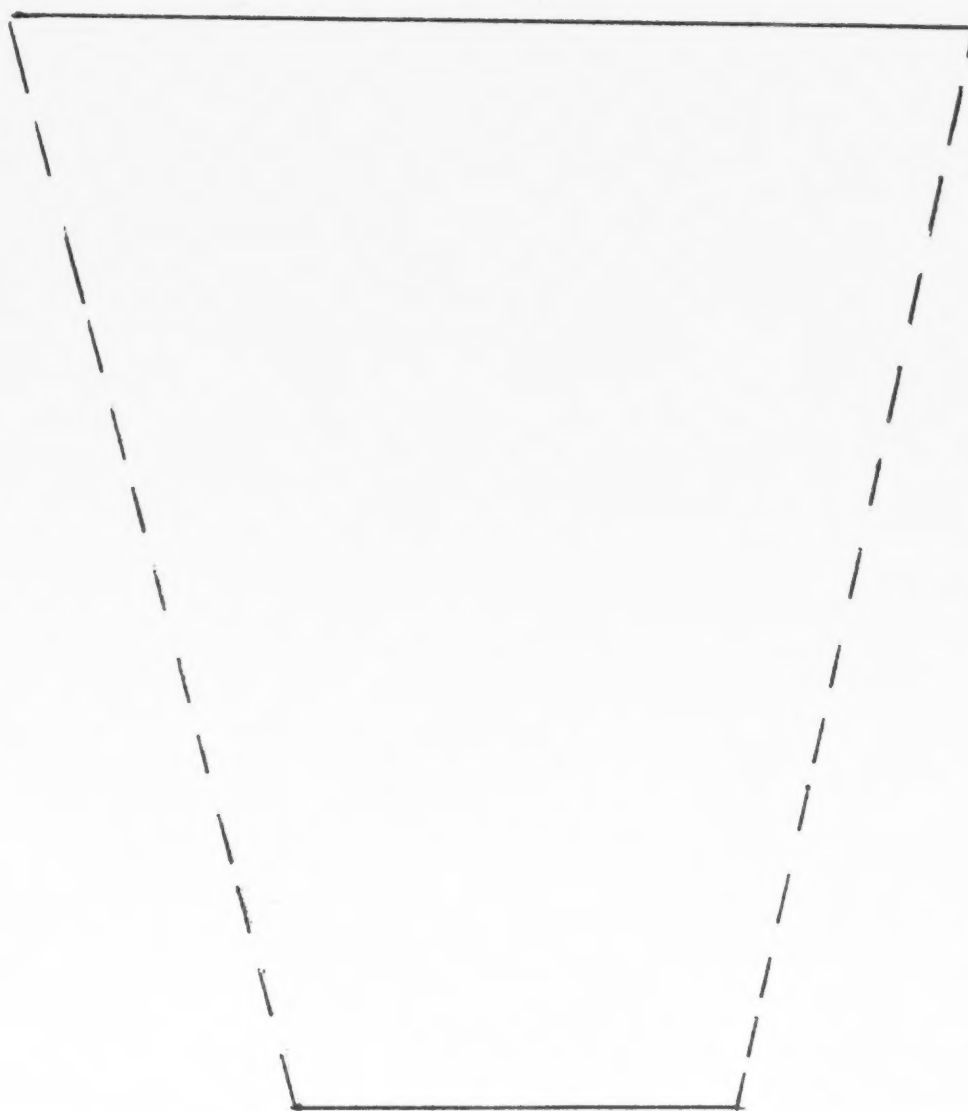
A Cone Describing the Relationship between the Number of
Requests Handled and the Level of the Processing Personnel

A Cone Describing the Inverse Scale of the Number of Requests Handled
vs.
the Personnel Skills Required

The Number
of Requests
Handled

High

Low



Low

High

Level of
Personnel
Skills and
Salaries